APPENDIX 8.2A

CNDDB Species Lists, CNPS Electronic Inventory, USFWS Species List for San Francisco County

APPENDIX 8.2A
Special-Status Species Potentially Occurring in the General SFERP Project Region.

Common Name	Scientific Name[a]	Status[b]	Primary Habitat[d]	Potential Occurrence in Project Area	Comments
Plants					
bent-flowered fiddleneck	*Amsinckia lunaris*	FSC, 1B	Coastal bluff scrub, cismontane woodland, valley and foothill grassland	Low. Project area is industrial and lacks native soils.	Annual herb. Blooms March-June.
Franciscan manzanita	*Arctostaphylos hookeri ssp. franciscana*	FSC, 1A	Coastal scrub (serpentinite)	Low. Project area is industrial and lacks native soils. May be found on San Bruno Mountain.	Evergreen shrub. Currently known only from the Presidio area. Power plant emissions can adversely impact serpentine-associated plant species. Blooms February-April
Presidio manzanita	*Arctostaphylos hookeri ssp. ravenii*	FE, CE, 1B	Chaparral, coastal prarie, coastal scrub/serpentine outcrop	Low. Project area is industrial and lacks native soils. May be found on San Bruno Mountain.	Evergreen shrub. Currently known only from the Presidio area. Blooms February-March.
San Bruno Mountain manzanita	*Arctostaphylos imbricata*	FSC, CE, 1B	Chaparral, coastal scrub/rocky	Low. Project area is industrial and lacks native soils.	Evergreen shrub. Currently known from only 5 occurrences on San Bruno Mountain. Blooms February-May.
Montara manzanita	*Arctostaphylos montaraensis*	FSC, 1B	Chaparral (maritime), coastal scrub	Low. Project area is industrial and lacks native soils.	Evergreen shrub. Currently known from only 10 occurrences in San Mateo County. J Blooms January-March.
marsh sandwort	*Arenaria paludicola*	FE, CE, 1B	Bogs and fens, marshes and freshwater swamps	Low. Project area is industrial and lacks native soils.	Perennial herb. Currently known only from occurrences in Mendocino and San Luis Obispo counties. Blooms May-August.
alkali milk-vetch	*Astragalus tener* var. *tener*	FSC, 1B	Playas, valley and foothill grasslands, alkaline vernal pools	Low. Project area is industrial and lacks native soils.	Annual herb. Last know collection in Bay Area in 1959. Blooms March-June.
San Francisco Bay spineflower	*Chorizanthe cuspidata* var. *cuspidata*	FSC, 1B	Coastal bluff scrub, coastal dunes, coastal prarie, coastal scrub/sandy	Low. Project area is industrial and lacks native soils.	Annual herb. Blooms April-August.
robust spineflower	*Chorizanthe robusta var. robusta*	FE, 1B	Cismontane woodland openings, coastal dunes, coastal scrub/sandy or gravelly	Low. Project area is industrial and lacks native soils.	Annual herb. Blooms April-September.
compact cobwebby thistle	*Cirsium occidentale* var. *compactum*	FSC, 1B	Chaparral, coastal dunes, coastal prarie, coastal scrub	Low. Project area is industrial and lacks native soils.	Perennial herb. Blooms April-June.

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Presidio clarkia	*Clarkia franciscana*	FE, CT, 1B	Coastal scrub, serpentinite valley and foothill grassland	Low. Project area is industrial and lacks native soils.	Annual herb. Blooms May-July.
round-headed chinese houses	*Collinsia corymbosa*	FSC, 1B	Coastal dunes	Low. Project area is industrial and lacks native soils.	Annual herb. Blooms April-June.
Point Reyes bird's-beak	*Cordylanthus maritimus* ssp. *palustris*	FSC, 1B	Saltwater marshes and swamps	Low. Project area is industrial and does not include wetland areas.	Hemiparasitic annual herb. Blooms June-October.
round-leaved filaree	*Erodium macrophyllum*	2	Cismontane woodland, valley and foothill grassland	Low. Project area is industrial and lacks native soils.	Annual herb. Blooms March-May.
fragrant fritillary	*Fritillaria liliacea*	FSC, 1B	Chaparral, cismontane woodland, valley and foothill grassland	Low. Project area is industrial and lacks native soils.	Perennial herb Blooms February-April.
San Francisco gumplant	*Grindelia hirsutula* var. *maritima*	FSC, 1B	Coastal bluff scrub, coastal scrub, valley and foothill grassland/ sandy or serpentinite	Low. Project area is industrial and lacks native soils. May be found on San Bruno Mountain.	Perennial herb. Power plant emissions can adversely impact serpentine-associated plant species. Blooms August-September.
Diablo helianthella	*Helianthella castanea*	FSC, 1B	Broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland	Low. Project area is industrial and lacks native soils.	Perennial herb. Blooms April-June.
Marin western flax	*Hesperolinon congestum*	FT, CT, 1B	Chaparral, valley and foothill grassland/serpentinite	Low. Project area is industrial and lacks native soils. May be found on San Bruno Mountain.	Annual herb. Power plant emissions can adversely impact serpentine-associated plant species. Blooms April-July.
Santa Cruz tarplant	*Holocarpha macradenia*	FT, CE, 1B	Coastal prairie, coastal scrub, valley and foothill grassland/often clay and sandy	Low. Project area is industrial and lacks native soils.	Annual herb. Last known population in San Francisco Bay Area eliminated by development in 1993. Blooms June-October.
Kellogg's horkelia	*Horkelia cuneata* ssp. *sericea*	FSC, 1B	Closed-cone coniferous forest, maritime chaparral, coastal scrub/sandy or gravelly, openings	Low. Project area is industrial and lacks native soils.	Perennial herb. Recorded occurrences from Crocker Hill may be the only ones in the San Francisco Bay Area. Blooms April-September.
beach layia	*Layia carnosa*	FE, CE, 1B	Coastal dunes, sandy coastal scrub	Low. Project area is industrial and lacks native soils.	Annual herb. Blooms March-July.
San Francisco lessingia	*Lessingia germanorum*	FE, CE, 1B	Coastal scrub (remnant dunes)	Low. Project area is industrial and lacks native soils.	Annual herb. Currently known from only 4 occurrences at the Presidio and one on San Bruno Mtn. Blooms June-November.

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rose linanthus	*Linanthus rosaceus*	FSC, 1B	Coastal bluff scrub	Low. Project area is industrial and lacks native soils.	Annual herb. Currently known from only one location near Pacifica. Blooms April-June.
white-rayed pentachaeta	*Pentachaeta bellidiflora*	FE, CE, 1B	Valley and foothill grassland (often on serpentine)	Low. Project area is industrial and lacks native soils. May be found on San Bruno Mountain.	Annual herb. Currently known from one location near Highway 280. Power plant emissions can adversely impact serpentine-associated plant species. Blooms March-May.
San Francisco popcorn-flower	*Plagiobothrys diffusus*	FSC, CE, 1B	Coastal prairie, valley and foothill grassland	Low. Project area is industrial and lacks native soils.	Annual herb. Blooms March-June.
hairless popcorn-flower	*Plagiobothrys glaber*	FSC, 1A	Alkaline meadows and seeps, coastal salt marshes and swamps	Low. Project area is industrial and does not include wetland areas..	Annual herb. Last confirmed record from 1954. Blooms March-May.
adobe sanicle	*Sanicula maritima*	FSC, 1B	Chaparral, coastal prairie, meadows and seeps, valley and foothill grassland/ clay, serpentine	Low. Project area is industrial and lacks native soils. May be found on San Bruno Mountain.	Perennial herb. Power plant emissions can adversely impact serpentine-associated plant species. Blooms February-May.
San Francisco campion	*Silene verecunda* ssp. *verecunda*	FSC, 1B	Coastal bluff scrub, chaparral, coastal prairie, coastal scrub, valley and foothill grassland/sandy	Low. Project area is industrial and lacks native soils.	Perennial herb. Blooms March-August.
Santa Cruz microseris	*Stebbinsoseris decipiens*	FSC, 1B	Broadleaved upland forest, closed-coned coniferous forest, chaparral, coastal prairie, coastal scrub, valley and foothill grassland/open areas, sometimes on serpentine	Low. Project area is industrial and lacks native soils. May be found on San Bruno Mountain.	Annual herb. Power plant emissions can adversely impact serpentine-associated plant species. Blooms April-May.
California seablite	*Suaeda californica*	CE, 1B	Coastal salt marshes and swamps	Low. Project area is industrial and does not include wetland areas..	Evergreen shrub. Extripated from the San Francisco Bay Area. Blooms July-October.
saline clover	*Trifolium depauperatum* var. *hydrophilum*	FSC, 1B	Marshes and swamps, mesic and alkaline valley and foothill grasslands, vernal pools	Low. Project area is industrial and lacks native soils or wetland areas.	Annual herb. Blooms April-June.
San Francisco owl's-clover	*Triphysaria floribunda*	FSC, 1B	Coastal prairie, coastal scrub, valley and foothill grassland/usually serpentine	Low. Project area is industrial and lacks native soils. May be found on San Bruno Mountain.	Annual herb. Power plant emissions can adversely impact serpentine-associated plant species. Blooms April-June.
coastal triquetrella	*Triquetrella californica*	1B	Coastal bluff scrub, coastal scrub	Low. Project area is industrial and lacks native soils.	Moss.

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Invertebrates					
Black abalone	*Haliotes cracherodii*	C	Marine	Low. Project will have no impact on local marine habitats.	None.
White abalone	*Haliotes sorenseni*	FE	Marine rocky reefs with kelp beds.	Low. Project will have no impact on local marine habitats.	Typically in deeper water than other California abalones.
Tomales isopod	*Caecidotea tomalensis*	CSC	Fresh water habitats.	Low. Project will have no impact on local marine habitats.	Endemic to the San Francisco Bay area.
Tryonia imitator	*mimic tryonia (=California brackishwater snail)*	none	Brackish saltwater marshes.	Low. Project will have no impact on local marine and marsh habitats.	None.
monarch butterfly	*Danaus plexippus*	none	Breeding habitat typically open fields and waterways with larval host, milkweed. Overwinter in eucalyptus groves along California coast and fir forest in Mexico.	Low. Project does not include any larval hosts, nectar sources, or trees.	Migrate north in April-June, south in September-October.
Bay checkerspot butterfly	*Euphydryas editha bayensis*	FT	Serpentine grassland with adult nectar sources and larval host plant(dwarf plantain and owls clover).	Low. Project area is industrial and lacks native soils or associated nectar sources. Found on San Bruno Mountain.	Power plant emissions can adversely impact serpentine-associated nectar plant species.
Mission blue butterfly	*Icaricia icarioides missionensis*	FE	Dunes and grassland areas with Lupinus host plant.	Low. Project area is industrial and lacks native soils or associated nectar sources. Found on San Bruno Mountain.	Restricted to 3 metapopulations including San Bruno Mountain in San Mateo County, Twin Peaks in San Francisco, and the vicinity of Skyline College in San Mateo County, California (Natureserve, 2003). Power plant emissions can adversely impact serpentine-associated nectar plant species.
San Bruno elfin butterfly	*Incisalia mossii bayensis*	FE	Wooded canyons with cliffs and rocky outcrops. Stonecrop host plant.	Low. Project area is industrial and lacks native soils or associated nectar sources. Found on San Bruno Mountain.	Current population restricted to San Bruno Mountain, Milagra Ridge, Montara Mountain, and Whiting Ridge (Natureserve, 2003). Power plant emissions can adversely impact serpentine-associated nectar plant species.
callippe silverspot butterfly	*Speyeria callippe callippe*	FE	Dry woodlands, foothill grasslands, and chaparral communities. Violet host plant.	Low. Project area is industrial and lacks native soils or associated nectar sources. Found on San Bruno Mountain.	Closest metapopulation found on San Bruno Mountain. Power plant emissions can adversely impact serpentine-associated nectar plant species.

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Opler's longhorn moth	*Adela oplerella*	FSC	Serpentine grasslands with its larval food plant, California cream cups.	Low. Project area is industrial and lacks native soils or associated nectar sources. Found on San Bruno Mountain.	Power plant emissions can adversely impact serpentine-associated nectar plant species.
Sandy beach tiger beetle	*Cicindela hirticollis gravida*	FSC	Sandy and dune habitat.	Low. Project area is industrial and lacks native soils.	None.
Globose dune beetle	*Coelus globosus*	FSC	Sandy and dune habitat with scattered vegetation.	Low. Project area is industrial and lacks native dune habitat.	None.
Ricksecker's water scavenger beetle	*Hydrochara rickseckeri*	FSC	Highly aquatic. Thought to inhabit shallow water habitat in creeks, springs, and ponds.	Low. The project are does not include any aquatic habitat	None.
bumblebee scarab beetle	*Lichnanthe ursina*	FSC	Sandy and dune habitat.	Low. Project area is industrial and lacks native soils.	None.
Fishes					
tidewater goby	*Eucyclogobius newberryi*	FE, CSC	Tidal streams associated with coastal wetlands.	Low. Project area is industrial and does not include impacts to aquatic habitat.	None.
Sacramento splittail	*Pogonichthys macrolepidotus*	FSC	Primarily in San Francisco Bay Delta and lower Sacramento River. Historic range includes Sacramento River to Redding and San Joaquin River to Friant Dam. Associated with river backwaters, pools, sloughs, shallow bays, and slow moving shallow water with aquatic vegetation.	Low. Project area is industrial and does not include impacts to aquatic habitat.	Peak spawning period March through May.
Delta smelt	*Hypomesus transpacificus*	FT	Endemic to the upper delta region of the Sacramento-San Joaquin River system.	Low. Project area is industrial and does not include impacts to aquatic habitat.	Spawning varies yearly between December and July.
Longfin smelt	*Spirinchus thaleichthys*	FSC	Pacific coastal states from Alaska to Monterey, California. Found spawning in the Sacramento-San Joaquin River system in the Central Valley.	Low. Project area is industrial and does not include impacts to aquatic habitat.	Extended spawning period may last from December into the early spring.

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Coho salmon (central California coast ESU)	*Oncorhynchus kisutch*	FT, CE	Spawn in Central California Coastal rivers. Migrate out to marine coastal waters.	Low. Project area is industrial and does not include impacts to aquatic habitat.	Migrate through San Francisco Bay.
Central California Coastal steelhead ESU	*Oncorhynchus mykiss*	FT	Spawn in Central California Coastal rivers. Migrate out to marine coastal waters.	Low. Project area is industrial and does not include impacts to aquatic habitat.	Migrate through San Francisco Bay.
Winter-run chinook salmon	*Oncorhynchus tshawytscha*	FE	One of four races of chinook salmon found spawning in the Sacramento-San Joaquin River system. Migrate out to marine coastal waters.	Low. Project area is industrial and does not include impacts to aquatic habitat.	Migrate through San Francisco Bay. Spawning typically begins in late December and can extend into April.
Central Valley fall/late fall-run chinook salmon	*Oncorhynchus tshawytscha*	C, CSC	Spawn in the Sacramento-San Joaquin River system. Migrate out to marine coastal waters.	Low. Project area is industrial and does not include impacts to aquatic habitat.	Migrate through San Francisco Bay.
Amphibians					
California tiger salamander	*Ambystoma californiense*	FPT, CSC	Associated with vernal pools, stock ponds, and other ponds in grassland or open woodland areas of central California. The range includes the Central Valley and surrounding foothills from Colusa to Kern County. Take upland refuge in mammal burrows or crevices in winter.	Low. Project area is industrial and does not include vernal pool breeding habitat..	Migrate to nearby ponds for breeding in December-February. The Santa Barbara and Sonoma County populations are listed as FE.
Foothill yellow-legged frog	*Rana boylii*	FSC, CSC	Gravel or sandy bottom freshwater streams in woodland habitats.	Low. Project area is industrial and does not include impacts to aquatic habitat.	Breeding season March to May.

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California red-legged frog	*Rana aurora draytonii*	FT, CSC	Associated with dense riparian areas with sufficient deep pool cover (stock ponds, wetlands, or idle stream channel pools) or slow moving water. Require aquatic habitat for breeding and utilize upland habitat for dispersal and cover. The range includes all valley drainages emptying into the Sacramento River from Shasta County south.	Low. Project area is industrial and does not include impacts to aquatic habitat.	Breeding season starts with the onset of rainfall from November-April. Tadpoles typically metamorphose between July and September.
Reptiles					
San Francisco garter snake	*Thamnophis sirtalis tetrataenia*	FE, CE	Associated with aquatic habitat such as wet meadows, marshes, and drainage ditches.	Low. Project area is industrial and does not include appropriate natural habitat.	Endemic to the San Francisco Bay Area.
California horned lizard	*Phrynosoma coronatum frontale*	FSC	Associated with a variety of habitat types but are most often found in dry shrubby open areas with gravel and sandy soils.	Low. Project area is industrial and does not include appropriate natural habitat.	Breeding in spring, hatchlings emerging July/August. Most active from March to October. Shelter in small mammal burrows.
Western pond turtle	*Clemmys marmorata*	CSC	The only native freshwater turtle in the Pacific Coast states. Highly aquatic and associated with riparian habitat including streams, rivers, sloughs, ponds, and artificial water bodies. Deep pools, basking sites, and aquatic vegetation are important habitat components.	Low. Project area is industrial and does not include impacts to appropriate aquatic or upland habitat.	Breeding season is typically between April to August. Eggs laid in an excavated chamber in upland habitat as much as 100 meters from the water. Hatchlings emerge in late summer or fall or over-winter in the nest to emerge the following spring. Adults hibernate in the winter by burying themselves in muddy bottoms underwater or in upland soil and vegetative litter.
Birds					
California brown pelican	*Pelecanus occidentalis californicus*	FE, CE	Coastal, pelagic, and offshore islands. Breeding colonies typically on offshore islands.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Power plant structures can increase the likelihood of avian collision.
double-crested cormorant	*Phalacrocorax auritus*	CSC	Found along the coast and inland water bodies. Typically nest colonial in trees or rocky areas near water.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Power plant structures can increase the likelihood of avian collision.

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Short-tailed albatros	*Diomedea albatrus*	FE	Open ocean. Island nester.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Nest limited to Torishima Island off of Japan. Occasional sightings off California coast.
California clapper rail	*Rallus longirostris obsoletus*	FE, CE	Salt marshes.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Endemic to the San Francisco Bay area.
Long-billed curlew	*Numenius americanus*	FSC, CT, MB	Winter habitat is primarily open land near, wetland, and agricultural fields in the Central Valley.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Winters in Central Valley. Power plant structures can increase the likelihood of avian collision.
bank swallow	*Riparia riparia*	FSC, CT	Typically in riparian areas or near water. Colonial nester in burrows in coastal bluffs, cliffs, and banks.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Power plant structures can increase the likelihood of avian collision.
California least tern	*Sterna antillarum browni*	FE, CE	Coastal. Nest on sandy beaches and mud flats.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Power plant structures can increase the likelihood of avian collision.
Bald eagle	*Haliaeetus leucocephalus*	FT, MB	Primary presence in California during winter migration. Associated with a variety of habitats. Nest sites typically found near water.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Platform nests in fork of tall tree or ledges. Migration season autumn through late winter. Power plant structures can increase the likelihood of avian collision.
Cooper's hawk	*Accipiter cooperii*	CSC	Woodland and otherwise forested areas.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Power plant structures can increase the likelihood of avian collision.
western snowy plover	*Charadrius alexandrinus nivosus*	FT, CSC	Coastal. Sandy beaches and mudflats.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Power plant structures can increase the likelihood of avian collision.
northern harrier	*Circus cyaneus*	CSC	Wetlands, marshes, and open fields.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Power plant structures can increase the likelihood of avian collision.
white-tailed kite	*Elanus leucurus*	FSC, FP, MB	Abundant in California's Central Valley where it is commonly associated with riparian and open habitats.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Typically breed between January and August. Their platform nests are located in trees or shrubs. Primarily a local resident and is known to form communal roosts in the fall and winter. Power plant structures can increase the likelihood of avian collision.

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saltmarsh common yellowthroat	*Geothlypis trichas sinuosa*	FSC, CSC	Dense marsh and riparian vegetation.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Power plant structures can increase the likelihood of avian collision.
Loggerhead shrike	*Lanius ludovicianus*	FSC, CSC, MB	Typically associated with open lowland and foothill scrub or riparian woodland habitats with adequate hunting perches.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Largely non-migratory and has been known to defend year-round territories. Nests are typically well-concealed and built in dense shrubs or trees. In California the breeding period typically begins in March and may extend into August. Power plant structures can increase the likelihood of avian collision.
Red knot	*Calidris canutus*	FSC	Coastal. Sandy beaches and mudflats.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Power plant structures can increase the likelihood of avian collision.
Vaux's swift	*Chaetura vauxi*	FSC, CSC	Woodland areas near water. Old growth coniferous and deciduous forest. Cavity nester.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Power plant structures can increase the likelihood of avian collision.
Black swift	*Cypseloides niger*	FSC, CSC	Woodland and riparian areas near water. Cliff nester, often behind waterfalls.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Power plant structures can increase the likelihood of avian collision.
Little willow flycatcher	*Empidonax traillii brewsteri*	CE, MB	Associated with dense willow riparian vegetation.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Breeding May-September. Power plant structures can increase the likelihood of avian collision.
American peregrine falcon	*Falco peregrinus anatum*	FD, CE, MB	Typically found along mountain ranges, river valleys, and coast lines. Nests are simple scrapes and often located on cliff ledges or other platform surfaces.	Low. Project area is industrial and lacks biological resources to attract wildlife.	The breeding season typically begins in March. Power plant structures can increase the likelihood of avian collision.
Black oystercatcher	*Haematopus bachmani*	FSC	Typically found along rocky coasts and island areas.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Breeding typically begins in the late spring. Power plant structures can increase the likelihood of avian collision.

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Harlequin duck	*Histrionicus histrionicus*	FSC, CSC	Habitat includes a variety of aquatic areas in the northwestern US and Canada. Typically breeds along mountain streams and lakes. Non-breeding birds often found offshore.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Current distribution is rare in California. Power plant structures can increase the likelihood of avian collision.
Marbled godwit	*Limosa fedoa*	FSC	Breeding habitat typically found on the plains of Canada and the northern US. Non-breeding habitat includes coastal areas.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Significant migration along the California Coast. Power plant structures can increase the likelihood of avian collision.
Lewis' woodpecker	*Melanerpes lewis*	FSC, MB	Associated with open forest and oak woodlands. Found along riparian woodland corridors in Central California.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Cavity nester. Breeding season begins in mid-April. Power plant structures can increase the likelihood of avian collision.
Whimbrel	*Numenius phaeopus*	FSC	Nesting areas found in the tundra areas of the far north. Non-breeding habitat includes coastal areas.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Found along the Pacific Coast in the winter. Power plant structures can increase the likelihood of avian collision.
Ashy storm-petrel	*Oceanodroma homochroa*	FSC, CSC	Open ocean. Typically nests on islands.	Low. Project area is industrial and lacks biological resources to attract wildlife.	The Farallon Islands off of San Francisco are a crucial nesting location. Power plant structures can increase the likelihood of avian collision.
Black skimmer	*Rynchops niger*	FSC, CSC	Found along coastal areas and sometimes on inland freshwater areas. Primarily nest on protected sandy.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Primarily breeds in southern California. Power plant structures can increase the likelihood of avian collision.
Rufus hummingbird	*Selasphorus rufus*	FSC, MB	Occur in coniferous forest and riparian woodlands in the Central Valley with nearby nectar sources.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Typically breed in California March-July. Build cup nest in trees, shrubs. Power plant structures can increase the likelihood of avian collision.
Allen's hummingbird	*Selasphorus sasin*	FSC	Coastal chaparral, brushland, and forests edges.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Power plant structures can increase the likelihood of avian collision.

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Elegant tern	*Sterna elegans*	FSC, CSC	Found along coastal areas and occasionally on inland lakes. Typically nest on sandy beaches.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Currently know to breed in only five sites in southern California and northwestern Mexico. San Francisco is part of the non-breeding range. Power plant structures can increase the likelihood of avian collision.
California black rail	*Laterallus jamaicensis coturniculus*	FSC, CT	Found in fresh and salt water marshes.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Breeding populations are confined to a few remaining patches of habitat in central and southern California and western Arizona. Most substantial population found in the northern San Francisco Bay area.
Tricolored blackbird	*Agelaius tricolor*	CSC, MB	Associated with wetland areas with dense vegetation such as cattails, tule, bulrush. Forage in grassland and agricultural fields.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Nest in large colonies. Breeding season is April-July. However has also been reported breeding in October and November. Power plant structures can increase the likelihood of avian collision.
Western burrowing owl	*Athene cunicularia hypugaea*	FSC, CSC, MB	Habitats includes open grassland habitat with fossorial mammal burrows, often associated with ground squirrels.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Utilize small mammal burrows for cover and natal dens. Breeding season is typically from February through August. Power plant structures can increase the likelihood of avian collision.
Ferruginous hawk	*Buteo regalis*	FSC, MB	Associated with a variety of habitats but commonly found in open grassland areas.	Low. Project area is industrial and lacks biological resources to attract wildlife.	Uncommon winter resident in California. Breeding typically from March-July. Use large stick nests in trees. Power plant structures can increase the likelihood of avian collision.
Mammals					
Guadalupe fur seal	*Arctocephalus townsendi*	FT, CT	Rocky marine island shores.	Low. Project area is industrial and includes no impacts to local marine habitat.	Current breeding colonies restricted to islands off of Mexico. Females give birth May-July. Non-breeding seals occasionally observed on California Islands(California Department of Fish and Game 1990). Farallon Islands observation are the closest to the project area(Matthews and Moseley 1990).
Steller (northern) sea-lion (rookery)	*Eumetopias jubatus*	FT	Rocky shores of the Pacific Coast.	Low. Project area is industrial and includes no impacts to local marine habitat.	Breed May-August and birth the following year in May-June.

APPENDIX 8.2A
Special-Status Species Potentially Occurring in the General SFERP Project Region.

Common Name	Scientific Name[a]	Status[b]	Primary Habitat[d]	Potential Occurrence in Project Area	Comments
Sei whale	*Balaenoptera borealis*	FE	Open ocean.	Low. Project area is industrial and includes no impacts to local marine habitat.	None.
Blue whale	*Balaenoptera musculus*	FE	Open ocean.	Low. Project area is industrial and includes no impacts to local marine habitat.	None.
Finback (fin) whale	*Balaenoptera physalus*	FE	Open ocean, typically 25 miles or more from shore.	Low. Project area is industrial and includes no impacts to local marine habitat.	None.
Right whale	*Eubalaena glacialis*	FE	Open ocean. Typically near shore.	Low. Project area is industrial and includes no impacts to local marine habitat.	None.
Sperm whale	*Physeter catadon (=macrocephalus)*	FE	Pelagic, prefers deep water, sometimes found around islands or in shallow shelf waters (e.g., 40-70 m, Scott and Sadove 1997). Young are born in the water.	Low. Project area is industrial and includes no impacts to local marine habitat.	None.
Gray whale	*Eschrichtius robustus*	D	Mostly in coastal and shallow shelf waters. Young are born in lagoons and bays.	Low. Project area is industrial and includes no impacts to local marine habitat.	None.
southern sea otter	*Enhydra lutris nereis*	FT	Found in coastal waters near shore, typically near kelp beds.	Low. Project area is industrial and includes no impacts to local marine habitat.	Current distribution California coast, mainly from Santa Cruz to Pismo Beach. Births typically December-March.
salt-marsh harvest mouse	*Reithrodontomys raviventris*	FE, CE	Found in salt and brackish tidal wetlands typically with dense vegetation (primarily pickleweed).	Low. Project area is industrial and includes no impacts to wetland habitat.	Small fragmented range in the marshes of the San Francisco Bay area.
Pacific western big-eared bat	*Corynorhinus townsendii townsendii*	FSC	Associated with coniferous and deciduous woodlands, chaparral, and riparian communities. Typically establish hibernation and maternity colonies in caves and human structures.	Low. The project site lacks roosting habitat. May roost in nearby structures.	Mating in Fall-Winter. Young born in spring. In Central California, maternal colonies begin to break up in August.

APPENDIX 8.2A
Special-Status Species Potentially Occurring in the General SFERP Project Region.

Common Name	Scientific Name[a]	Status[b]	Primary Habitat[d]	Potential Occurrence in Project Area	Comments
Greater western mastiff-bat	*Eumops perotis californicus*	FSC	Typically associated with arid, rocky areas in proximity to a water body. Roost in high cliffs, rock crevices, and buildings. Male and female bats share the same roost locations. These roost areas are presumed to be used year round.	Low. The project site lacks roosting habitat. May roost in nearby structures.	Breeding in early spring. Young born June to August. Remains active through the winter with daytime torpor.
Long-legged myotis bat	*Myotis volans*	FSC	Associated with coniferous and deciduous woodlands, chaparral, and riparian communities. Typically hibernate in caves.	Low. The project site lacks roosting habitat. May roost in nearby structures.	Breeding begins in late summer. Young aren't born until the following spring/summer. Large communal nurseries.
Yuma myotis bat	*Myotis yumanensis*	FSC	Associated with a variety of habitats, common in open forests and woodlands near water. Daytime maternal colonies and summer roosts in buildings, mines, caves, or crevices.	Low. The project site lacks roosting habitat. May roost in nearby structures.	Mate in fall, give birth May to July. Presumed to be a local migrant and a winter hibernator.
Long-eared myotis bat	*Myotis evotis*	FSC	Found in a variety of forested and shrubland habitats. Will roost in buildings, hollow trees, mines, caves, and fissures.	Low. The project site lacks roosting habitat. May roost in nearby structures.	Found throughout Western North America from British Columbia to Baja Mexico. Form small maternal colonies. Birth in summer.
Fringed myotis bat	*Myotis thysanodes*	FSC	Found in a variety of habitats including desert, grassland, and woodland communities. Roosts in caves, mines, rock crevices, buildings, and other protected sites. Nursery colonies often found in caves, mines, and buildings.	Low. The project site lacks roosting habitat. May roost in nearby structures.	Found throughout Western North America from British Columbia to southern Mexico. Mate in the fall and birth in the summer.
San Francisco dusky-footed woodrat	*Neotoma fuscipes annectens*	FSC, CSC	Forest and chaparral habitats.	Low. The project site lacks suitable natural habitat.	None.
Point Reyes jumping mouse	*Zapus trinotatus orarius*	FSC, CSC	Typically associated with thickly vegetated areas along streams, ponds, and marshes.	Low. The project site lacks suitable natural habitat.	None.

APPENDIX 8.2A
Special-Status Species Potentially Occurring in the General SFERP Project Region.

Common Name	Scientific Name[a]	Status[b]	Primary Habitat[d]	Potential Occurrence in Project Area	Comments

Notes:
[a] Scientific names are based on the following sources: AOU (1983); Jennings (1983); Zeiner *et al.* (1990a-c).
[b] Status. Status of species relative to the Federal and California State Endangered Species Acts and Fish and Game Code:

Federal Status
FE Federally listed as endangered.
FT Federally listed as threatened.
FPE Proposed endangered.
FPT Proposed threatened.
Candidate for listing as federally endangered or threatened. Proposed rules have not yet been issued because they have been precluded at present by other listing activity.
FD Delisted from Federal threatened or endangered status.
FSC Federal Species of Special Concern. Proposed rules have not yet been issued because they have been precluded at present by other listing activity.
MB Migratory Bird Treaty Act. of 1918. Protects native birds, eggs, and their nests.

California Status
CE State listed as endangered. Species whose continued existence in California is jeopardized.
CT State listed as threatened. Species that although not presently threatened in California with extinction are likely to become endangered in the foreseeable future.
CSC California Department of Fish and Game "Species of Special Concern." Species with declining populations in California.
FP Fully protected against take pursuant to the Fish and Game Code Sections 3503.5, 3511, 4700, 5050, 5515.

Other Status.
CNPS California Native Plant Society Listing (does not apply to wildlife species).
Plants, rare, threatened or endangered in California and elsewhere and are rare throughout their range. According to CNPS, all of the plants constituting List 1B meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection) of the California Department of Fish and Game Code and are eligible for state listing.

SOURCE: California Dept. of Fish and Game, California Natural Diversity Database, December 2003; California Native Plant Society, Inventory of Rare and Endangered Vascular Plants of California, 2001.

APPENDIX 8.2B

Qualifications/Resumes of Field Surveyors

John Cleckler
Wildlife Biologist

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Mr. Cleckler is a staff biologist in CH2MHILL's Sacramento Office. He has over 11 years of experience as a wildlife biologist. His experience includes performing general and special-status wildlife surveys using standard census techniques. His expertise include invertebrate and vertebrate natural history, vertebrate and invertebrate collecting methods, and identifying herpetile, bird, and mammalian species. He is familiar with state and federal regulations pertaining to both wildlife and wetlands. He prepares biological assessments and develops mitigation plans for Section 7 and 10(a) compliance under the Endangered Species Act.

Education

B.S. – Wildlife Biology, University of California at Davis, 1990

Professional Registrations

California Department of Fish and Game Scientific Collector's Permit

Distinguishing Qualifications

- Over eleven years experience working in ecosystems of the Western U.S.
- Experience in conducting pre-construction surveys and construction monitoring
- Experienced with monitoring horizontal directional drilling projects
- Experienced wetland delineator
- Experienced with preparing a variety of environmental permits

Selected Project Experience

Project Biologist, Metcalf Energy Center, Santa Clara County. Assisted in preparation of the Biological Resource Mitigation Implementation and Monitoring Plan, Resource Management Plan for the MEC Preserve, Fisher Creek Riparian Corridor Enhancement Plan, and Horizontal Directional Drilling Inadvertent Returns Contingency Plan. Managed monitoring efforts, document review, and prepared the environmental training program associated with the proposed Metcalf Energy Center.

Permitting, Walnut Energy Center, Turlock Irrigation District. Conducted site reconnaissance surveys and participated in the preparation of an Application for Certification to be submitted to the California Energy Commission.

Permitting, Modesto Electric Generation Station, Modesto Irrigation District. Conducted site reconnaissance surveys and participated in the preparation of a Small Power Plant Exemption to be submitted to the California Energy Commission.

Environmental Compliance Monitoring, Woodland Generation Station, Modesto Irrigation District. Provided biological monitoring to ensure compliance with conditions of site certification.

Team Leader, Teayawa Energy Center Desert Tortoise Surveys, Riverside County. Performed protocol desert tortoise surveys along proposed utility lines associated with the Teayawa Energy Center project. Assisted with preparation and review of the Biological Resources section of the EIS/EIR.

Biological Assessment, Casmalia Resources Landfill, Casmalia. Prepared biological assessment for hazardous waste remediation activities.

Fiber Optic Communications Project Construction Monitoring-Level (3) Communications. Managed construction monitoring of a 96.5-mile longhaul fiber optic communications line. Special focus was placed on avoidance of desert tortoise and Mohave ground squirrel habitat. Included development and implementation of an environmental awareness program.

Fiber Optic Communications Cable, Level (3) Communications. This project included a full range of biological permitting services in support of a nationwide fiber optic network installation project. This linear project included extensive segments transecting the Mojave Desert and the Central Coast regions. Approximately 75 percent of the buried fiber optic cable system was located within railroad right-of-ways. The remainder was located within highway right-of-ways and limited private lands. Responsibilities included environmental documentation and permitting, including wetland delineations, biological resource surveys, and agency consultation.

Bird/Wind Turbine Collision Study - California Energy Commission. Participated in a three-year California Energy Commission wind farm impact study near Tehachapi and Palm Springs, California. Conducted standard point count surveys and scavenger studies in order to determine the correlation between bird activity and bird mortality in and around wind farm developments. Also included coordination of the Palm Springs field station, field staff, data entry, and report writing.

Salmon Habitat Survey, California Department of Fish and Game. Surveyed salmon habitat in northwestern California using the General Aquatic Wildlife System. Recorded dimensional measurements, substrate channel types, riparian cover, and other stream features. Conducted electroshock fish sampling.

Desert Tortoise Survey, Los Angeles Department of Water and Power. Surveyed for, measured, weighed, marked, and relocated desert tortoises for a Los Angeles Department of Water and Power transmission line construction project. Constructed tortoise burrows and relocated eggs. Monitored construction activities and maintained client relations. Compiled a variety of daily reports. Surveys were conducted in accordance with Biological Opinion #1-6-90-F46.

Biological Tasks Lead, Wastewater Collection System Water Crossing Rehabilitation Project, Clearlake Oaks County Water District. Performed initial site reconnaissance and Prepared Streambed Alteration Agreement request. Managed biological monitor during construction.

Willow Flycatcher Survey, Federal Highways. Performed protocol willow flycatcher surveys within suitable riparian habitat adjacent to the proposed Blue Lakes Road improvement project.

Northern Spotted Owl Survey, Federal Highways. Performed protocol northern spotted owl surveys within suitable habitat adjacent to the proposed Hyampom Road improvement project.

Environmental Quality Assurance Program Environmental Monitor, San Luis Obispo County. Provided environmental monitoring for the Arco Quadalupe Dunes clean up and restoration project. Also provided consultation with project proponents regarding county permit limitation and requirements.

Environmental Quality Assurance Program Onsite Environmental Coordinator, Santa Barbara County. Managed a crew of environmental monitors on a fiber optics installation project throughout the County of Santa Barbara. Also provided consultation 3ith project proponents regarding he County permit limitation and requirements.

Desert Tortoise Monitoring, Mission Geoscience. Performed desert tortoise monitoring for exploratory drilling project near Barstow, California. Included presentation of an environmental awareness training program.

Sensitive Species Surveys, Coachella Valley Association of Governments. Performed focused surveys for a highway interchange expansion project. Focused surveys were conducted for Coachella Valley fringed-toed lizard, Coachella Valley Jerusalem cricket, Coachella Valley giant sand treader cricket, and Coachella Valley grasshopper.

Fish Creek Restoration Project, Vulcan Materials/CalMat Division. Performed a biological reconnaissance survey to determine impacts associated with the proposed realignment and restoration of Fish Creek.

Communications Facility Biological Resources Assessment, AT&T. Provided biological assessment of proposed and existing communication sites.

Sun Valley Biological Resources Assessment and Tree Inventory, Vulcan Materials/CalMet Division. Performed a biological reconnaissance survey to determine impacts of proposed mining expansion. Assessment included an inventory of native tree species.

Oro Grande Sand and Gravel Mine Restoration Project, Vulcan Materials/CalMet Division. Performed a biological reconnaissance survey to determine impacts associated with the reclamation strategy and proposed reclamation activities. Special focus was placed on determination of suitable desert tortoise habitat. Developed an environmental awareness program and a list of avoidance measures.

Montecito Ranch Biological Resources Assessment, Citation Homes. Performed a biological reconnaissance survey to determine impacts of proposed housing development. Special focus was placed on determination of suitable California gnatcatcher habitat.

Sawpit Dam Modification Project, County of Los Angeles Department of Public Works. Conducted riparian nesting bird surveys downstream of the Sawpit Reservoir. Also trapped southwestern pond turtles prior to de-watering of the reservoir.

Oak Valley Estates Biological Resources Assessment, The St. Clair Company. Performed a biological reconnaissance survey to determine impacts of proposed housing development. Also attended public hearings in support of the biological resources determination.

Southwestern Pond Turtle Translocation Study, County of Los Angeles Department of Public Works. Captured and translocated southwestern pond turtles from the San Gabriel and Morris reservoir sediment removal project area. Subsequently monitored the translocation success and turtle movement using radio telementry and GPS.

San Gabriel Reservoir Sluicing Project, Los Angeles Department of Water and Power. Conducted biological surveys associated with the San Gabriel and Morris reservoir sediment removal project.

Surveys including mammal transects, mammal scent stations, bird surveys, and amphibian night sit surveys.

San Joaquin Sanctuary Restoration Project, Irvine Water District. Conducted breeding birds surveys with special focus on the presence of least Bell's vireo. Monitored construction activities in the vicinity of critical habitat.

Communications Facility Biological Resources Assessment, Pacific Bell Wireless. Provided biological assessment of proposed and existing communication sites.

Balona Wetlands Restoration, Impact Sciences. Collected invertebrate core samples from stream channels.

Quarry at Wheeler Ridge Biological Mitigation Plan, Vulcan Materials/CalMet Division. Performed a biological reconnaissance survey to determine impacts of proposed mining expansion. Special focus was placed on determination of suitable San Joaquin kit fox and blunt-nosed leopard lizard habitat. A list of appropriate mitigation measures was compiled.

Desert Tortoise Survey and Construction Monitoring, Earth Tech, Corrections Corporation of America. Monitored California City Prison construction activity in desert tortoise habitat. Performed a tortoise clearance survey of a 67.5-acre exclosure. Processed and relocated tortoises. Surveys were conducted under a U.S. Fish and Wildlife Services (USFWS). Prepared and delivered a worker education program.

Desert Tortoise Mark/Recapture Survey, National Training Center. Conducted a mark/recapture survey for desert tortoises on two 1-square mile plots at the National Training Center, Fort Irwin. Surveys are being conducted under USFWS Regional Blanket Permit and subpermit.

Hawksbill Turtle Study, Queensland Department of Environmental Heritage, Australia. Assisted Ph.D. student with an intensive hawksbill turtle nesting biology study within the Great Barrier Reef.

Black-Naped Tern Monitoring, Queensland Department of Environmental Heritage, Australia. Monitored black-naped tern nests as part of an island ecology study in the Great Barrier Reef. Nest success and behavior was observed and recorded on a daily basis throughout the nesting season. These data were collected in conjunction with an ongoing sea turtle project funded by the Queensland Department of Environmental Heritage.

Burrowing Species of Special Concern Survey, Los Vaqueros Reservoir Project. Conducted surveys for burrowing species of special concern, including San Joaquin kit fox, burrowing owl, and American badger, for the Los Vaqueros Reservoir construction project near Livermore, California. Also constructed drift fences for California tiger salamander.

Vegetation Surveys/California State University Domingos Hills Foundation, National Training Center. Conducted vegetation surveys for a disturbance comparison study at the National Training Center, at Fort Irwin near Barstow, California. Used line transects, frequency frames, and biomass analysis methods.

Desert Tortoise Survey/Bureau of Land Management. Conducted desert tortoise population density surveys for the purpose of testing the one-km2 and one-hectare survey methods against the standard 60-day design. Measured, weighed, marked, and assessed health of tortoises.

Biological Survey, Weyerhaeuser. Surveyed old growth habitat for marbled murrelets and northern spotted owl on Weyerhaeuser tree farm property near Coos Bay and Roseville, Oregon. Surveys were conducted using standardized protocols. Identified occupied stands for murrelet. Performed night sits for

spotted owls. Assisted with the daytime follow up search to locate nestlings. Participated in the capture and banding of nestling spotted owls.

Mohave Ground Squirrel Survey, California Energy Commission. Trapped, handled, and installed pit tags on Mohave ground squirrels near China Lake, California.

Biological Resource Studies, Colorado State University, National Training Center. Monitored biological resources as part of the Army National Training Center's Land Condition and Trend Analysis Study at Fort Irwin near Barstow, California.

Biological Survey, Oregon Department of Fish and Wildlife. Surveyed proposed state timber sales for marbled murrelets in northwestern Oregon.

Guanaco Natural History Study, Iowa State University. Assisted Ph.D. student with ongoing study of guanacos (a camelid species) in Torres Del Paine National Park, Chile. Collected data for behavioral, radio telementry, and mortality studies. Captured and tagged newborn and adult male guanacos.

Desert Tortoise Survey, Kern River Gas Company. Surveyed for, handled, marked, and relocated desert tortoises for a pipeline construction project. Monitored construction activities and maintained client relations. Coordinated biology crews and completed a variety of daily reports. Surveys were conducted in accordance with Biological Opinion #1-1-89-F36R.

Fisheries Surveys, Los Padres Nation Forest. Conducted stream habitat typing along with electroshock fish sampling.

Ozone Damage Assessment, Sequoia and Kings Canyon National Parks. Assisted air quality specialist with assessment of ozone damage to pine species by way of chloretic mottle indices.

Peregrine Falcon Monitoring Survey, The Peregrine Fund. Monitored the hacking procedure release of three juvenile peregrine falcons in Great Basin National Park, Nevada. Conducted behavioral observations, predator defense, radio telemetry, and data recording. Compiled written report following release.

Bear Management, Sequoia and Kings Canyon National Parks. Assisted park biologists with black bear management program. Included educational presentations, incident reporting, and bear capture.

Workshops, Seminars, and Professional Training

- California Tiger Salamander Workshop – The Wildlife Society, 2003
- Giant Garter Snake Workshop – The Wildlife Society, 2003
- California Red-Legged Frog Workshop-The Wildlife Society, 2002
- Identification and Ecology of Sensitive Amphibians and Reptiles of the Central and Southern Sierra Nevada Workshop-The Wildlife Society, 2001
- Surveying, Monitoring, and Handling Techniques Workshop – Desert Tortoise Council, 1992, 1993, 1999, and 2000
- Basic Wetland Delineation Training – Wetland Training Institute, 1998
- Basic Tracking and Wilderness Awareness Training – Earth Skills, 1998

- Horizontal Directional Drilling Inspector Certification Seminar – North American Society for Trenchless Technology & California Department of Transportation, 2000 (certification received).

Memberships in Professional Organizations

- The Wildlife Society
- California Native Plant Society
- The Nature Conservancy